

GREY MATTERS

THE ETHICS OF NAMING EPIDEMICS

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“We need to focus on the enemy, and that’s the virus.”— Former Senior Director for Global Health Security and Biothreats, Rear Admiral R. Timothy Ziemer¹

Abstract

Epidemics and pandemics have profoundly shaped the course of human history. Naming them has ethical consequences because of the value laden in words. Nuances of language can themselves be contagious, influencing attitudes toward people, nations, and other qualities that may be incidental to the initiation or propagation of an infectious disease. A poorly chosen name for an infectious outbreak can divide communities at a time when people should be coming together and collaborating for the sake of the common good. Striving for objectivity in language is helpful, but it is also insufficient, for it omits the ethical framework needed to respond to a pandemic and does not adequately address the meaning of suffering.

Introduction

On February 11, 2020, one month after the first confirmed death from what the media had been referring to as the “Wuhan coronavirus,”² the World Health Organization officially named the emerging disease “COVID-19.” Names have a way of sticking in the memory, and some who have persisted in using the original name “Wuhan virus” have been called racist and accused of contributing to its spread by the choice of words that allegedly offend against social justice.³

The method for naming epidemics and pandemics follows a long tradition of nomenclature that has evolved over time. Ethics, among other factors, has guided a trend away from naming diseases by their geographic, national, or ethnic associations toward a nomenclature based in scientific objectivity. A brief survey of the naming of epidemics elucidates some of the lessons learned.

Geography as Explanatory

The first cases of COVID-19 were detected in Wuhan, the capital of the Hubei Province in central China, in December 2019. The virus then spread rapidly around the globe and on March 11 was recognized as a pandemic. At the time of this writing, the number of cases worldwide has surpassed one million and the number of deaths 50,000. These numbers continue to soar exponentially, arousing anxiety everywhere as people do what they can to protect themselves and their families, as healthcare professionals step forward to care for those affected or at risk, and as communities unite in solidarity, refusing to give in to fear.

It is natural for rational beings to want to understand how a novel threat emerged and from where it originated. A reasonably cautious person, knowing where the

dreaded coronavirus originated, would cancel travel plans to visit Wuhan or any region where the virus has spread for the time being in order to avoid becoming infected.

Geography as Evidentiary

More importantly, there are scientific reasons to zero in quickly on the epicenter of an emergent epidemic, starting where it was first encountered. Whether the infectious agent is viral, bacterial, or prion, the same principles apply. Suppose reports surface of a new viral outbreak causing severe disease. Virologists need to learn how the virus originated, whether it arose from a reservoir of animal carriers, where the reservoir is likely to be found, how it is geographically distributed, what type of contact people might have had with the reservoir, whether the virus crossed species boundaries, where scientists can obtain specimens for study, and how the virus compares to other, known viruses. Scientific investigations have traced previous pathologic coronavirus epidemics to China and specifically to bats, which are recognized as an important natural reservoir host.⁴⁻⁶

Cell biologists need to learn how a novel virus gains entry to the human body, what proteins or receptors are involved, how the virus hijacks the host's cellular machinery, how it evades immune surveillance, and what its biochemical vulnerabilities may be. Geneticists need to determine what kind of genetic material (e.g., DNA, RNA, single-stranded or double-stranded) constitutes the virus, whether there are specific mutations that determine its virulence and transmissibility, whether the virus is of natural origin or malicious synthetic contrivance, and what testing methods can be developed to detect the virus in patients. Epidemiologists need to determine the pattern of transmission and assist public health authorities to develop policies and procedures to contain or limit the spread of the virus. Immunologists need to gain this knowledge in order to develop effective and safe vaccines. Clinicians of many specialties need to learn how the virus affects each organ system in the body in order to develop effective diagnostic and therapeutic approaches.

Knowing from where the virus originated is critical to developing a comprehensive understanding of the threat, responding to it, and anticipating and preparing for potential future threats from similar or related sources. Moreover, effective collaboration among all of these disciplines requires a common language in referring to the virus and its manifestations.

There are numerous examples of historic epidemics that were named after the places where they were first detected or studied. The Asian flu of 1957-1958 (H2N2 influenza) was first detected in Singapore. The Hong Kong flu of 1968-1970 (H3N2 influenza) first appeared in Hong Kong. The Marburg hemorrhagic fever virus was first described in 1967 during small outbreaks in the German cities of Marburg and Frankfurt and in the Yugoslav capital Belgrade. The tick-borne Lyme disease, which has long been endemic throughout North America and Europe, was named after Old Lyme, Connecticut, where it was identified in 1976, although earlier descriptions employed various other names. The Zaire Ebola hemorrhagic fever virus, which causes periodic and often fatal outbreaks in Central and Western Africa, was named in 1976 after the Ebola River, where it was first thought to have originated. There

are many people who would not have heard of these names if not for the associated epidemics.

Geography as Incidental

There are also examples of epidemics named after mistaken places of origination. A notorious example is the 1918-1919 influenza pandemic commonly remembered as the “Spanish flu,” which claimed the lives of more than 50 million people worldwide.⁷ The virus did not originate in Spain. Its perceived place of origin drew from an early news report of a “strange new form of disease” in Madrid.⁸ The rhetoric of mystery combined with fear branded the novel virus with an inaccurate name that still lingers. A century later, the geographical origin of the 1918 influenza pandemic remains uncertain.⁷

Rocky Mountain spotted fever, which was first identified in Montana, is most prevalent in the Eastern U.S. Avoiding travel to the Rocky Mountains does not protect against this tick-borne bacterial disease.

Haemophilus influenza is yet another misnomer. It was so named because it was first described during an influenza pandemic before the viral nature of influenza was known. Although unrelated to the influenza virus, the bacterium *H. influenza* has kept its original name.

The swine influenza (H1N1) pandemic of 2009-2010, colloquially named “swine flu” because of its origin in a Eurasian pig influenza virus, was transmitted from humans to humans and not by pigs. Nevertheless, its name gave rise to an erroneous public perception that pigs were a danger, leading some countries to ban the importation of pork or even slaughter livestock.⁸ As the first cases were recognized in Mexico City, the name “Mexican swine flu” was occasionally applied, although it should be noted that the plague was not caused by the Mexican people.

These examples expose the problem of naming infectious diseases after geographical locations or associated nationalities. Doing so has the unintended consequence of potentially stigmatizing entire groups of people who are in no way at fault for the disease. During the outbreaks of the Great Bubonic Plague or Black Death, which took the lives of up to half of the European population in the 14th century, some blamed the Jews on the erroneous theory that they poisoned the wells. Fear then drove or aggravated a wave of persecution, including massacres.^{9,10} Another example of racial prejudice occurred in 1892 in New York City following outbreaks of cholera and typhus as officials applied a selective quarantine to Jewish immigrants.^{8,11}

During the current coronavirus pandemic, a small and ignorant minority, influenced by announcements of the “Chinese coronavirus” or “Wuhan coronavirus,” has targeted Asians and even Asian-Americans as potential scapegoats.¹² Whereas the majority of the coronaviruses are found in China,^{4,13,14} the Chinese people are not to blame. Nor has any evidence emerged to support the theory that malicious government forces are behind the pandemic, although the fog surrounding any crisis may create occasions for political deception, opportunism, or rumors thereof.¹⁵

The problem with naming the coronavirus of 2019-2020 after Wuhan, where it was first detected, is the inescapable psychological association of a dreaded infectious disease with the people who live there. My own great aunt, Elizabeth Cheshire, lived

in Wuhan a century ago. As a young woman, she left her home in North Carolina and traveled halfway around the world to serve as a Christian missionary. In Wuhan she learned to speak Mandarin and came to understand Chinese culture. With a guide she and her husband explored one of the caves near Yichang, which lies on the Yangtze River 200 miles to the west of Wuhan. In such caves live bats, including those that harbor coronaviruses, although that was not known at the time. From Yichang in November 1915, she wrote to her father: “Imagine this dark rocky cave, about five and a half feet high, and twenty feet broad, and the floor of it for about forty or fifty feet covered with enormous petrified dragons, just like those on the Chinese flag, except the heads are lizard-like.” She did not succumb to a coronavirus infection.

Elizabeth served for 16 years in the Hubei Province, teaching women to sew and thereby elevating their social and economic status. It was Christian missionaries of that era who challenged the traditional Chinese custom of binding young girls’ feet, a practice that caused lifelong disability. Foot binding was finally banned in 1912, but devaluation of women remained an aspect of Chinese culture. In April 1916, in a letter to her father, Elizabeth commented about a family she encountered during her travels in China: “We asked the mother how many children she had. ‘Four,’ she said, pointing to the boys. ‘Whose are the girls?’ we said. ‘Oh they are mine,’ she answered, ‘but they aren’t children; they are only girls.’”

Ethical Significance

What this personal connection illustrates at an individual level, and what the coronavirus pandemic demonstrates at a planetary level, is that all people belong to a global community. This is true biologically, because viruses do not respect national borders. This is true medically, because pandemics represent a shared global challenge, and an effective response requires international cooperation. This is true morally, because our choices can affect our neighbors, even neighbors who live far from us, neighbors who may at once be contagious and afflicted, even as we ourselves may become. In our common humanity there are universal diseases that threaten us. There are also universal moral truths that can enlighten us.

Neuroethical Correlations

Shifting from a discussion of geography to neuroanatomy, within the human brain are further correlations relevant to the naming of epidemics. Functional MRI studies have found that, even in the absence of conscious awareness, brain regions involved in semantic processing convey information related to the meaning of words.¹⁶ Whereas the neural representation of concrete words is organized by similarities to sensory experiences, the neural processing of abstract words is emotionally valenced and influenced by associative relations.^{17,18} Words and phrases with emotional meaning, including words that signal danger, modulate activity in the amygdala, which is known for its role in processing fear. Emotionally laden words also engage the rostral anterior cingulate cortex, which is associated with emotion processing and plays a role in monitoring and resolving emotional conflict.^{18,19} The anterior cingulate cortex is also one of the areas involved in forming first impressions and assessing trustworthiness.²¹ In communicating information about epidemics to the public, first impressions matter, as psychology informs people’s ideas and behaviors.⁸

What this means for the naming of epidemics is that the human brain is incapable of being perfectly objective or neutral in interpreting the language chosen to designate and describe an infectious threat. Internal linguistic associations, including those based on geography, culture, or ethnicity, will influence how people think about epidemics and perceive potential threats. The media's choice of language to frame an epidemic will influence moods and attitudes, whether consciously or not.²¹ When in a heightened state of anxiety, the brain will detect even subtle cues in phrasing in an effort to make sense of a crisis. The brain, in a way, is wired to look for sources of explanation, including blame. When information is incomplete, confusion and uncertainty can tip the balance toward moral panic.²²

Scientific Objectivity

In response to concerns about causing offense to cultural, social, national, regional, professional, or ethnic groups, in 2015, the World Health Organization developed a set of best practices for naming new diseases.²³ Published in its revised International Classification of Diseases, these standard best practices were the basis for naming the novel coronavirus that emerged from Wuhan in 2019. In unpacking the name of COVID-19, "COVI" is short for coronavirus, a type of RNA virus affecting mammals and birds that derives its name from the corona-like morphology of the club-shaped glycoproteins seen by electron microscopy to project from the surface of the spherical virion. The "D" stands for disease, and the "19" represents the last two digits of the year the strain was first identified. The virus causing COVID-19 was named by the International Committee on Taxonomy of Viruses SARS-CoV-2, as it is genetically similar to SARS-CoV, which caused the epidemic of severe acute respiratory syndrome (SARS) in 2002-2003.

Perfect Objectivity

Establishing objective nomenclature for novel human diseases free from ethnic, cultural, or national associations is a welcome advancement. Objective language based in scientific facts shifts the focus from blame to constructive responses including investigation, prevention, and treatment. An added benefit and accommodation to the anatomical limitations of the human voice is that the name COVID-19 is pronounceable.

Perfection in objectivity, while ethically praiseworthy in the naming of epidemics, is nevertheless incomplete. A physical description of a virus that includes its genome, sequenced in full, along with its molecular size measured to multiple decimal points and exact calculations of population case fatality ratios fails to tell the full story. An epidemic is more. No objective description of the medical consequences is adequate to convey the human suffering and personal loss that occurs. The existential threat of a lethal pandemic cannot be represented numerically. Intuitively aware of this, the human brain naturally rebels against the reduction of meaning to cold, inert, scientific terminology. Searching for answers, people will continue to embellish, extrapolate, and interpret what is missing from a purportedly objective description of an infectious disease. This is especially true for a devastating one.

Beyond Objectivity

The human brain may not be wired for objectivity, but the human mind can aspire to impartiality, particularly in refraining from judging others. In times of pandemic and panic, the main focus of medicine remains care and compassion for the ill and hurting. For the larger task of finding meaning in sickness and suffering, the human brain alone can take only first steps. Communities taking larger strides can go much farther by sharing knowledge and resources and supporting one another. To complete the journey toward healing, restoration, and renewal requires rescue by the transcendent giver of life and ultimate salvation, whose hand is extended to all who believe and confess His name.

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